```
1  void manipulate () {
2        // code
3        synchronized (syncObj) {
4             // critical section
5        }
6        // code
7  }
```


FIG. 1

```
1   shared objects:
2   flag[0..n-1] in {-1, .. n-2}
3   turn[0..n-2] in {0, .. n-1}
4   flag[i] <- -1
5   <entry>
6   for k=0 to n-2 do
7         flag[i] <- k
8         turn[k] <- i
9         while     (there exists j!=i,
10                  flag[j] >= k and
11                  turn[k] = i) do nothing
12
13  <critical section>
14
15  <exit>
16  flag[i] <- - -1
```

FIG. 2

Process A	Line No.	Process B
<entry>	1	<entry>
for k=0 to 0 do	2	for k=0 to 0 do
flag[0] <- 0	3	flag[1] <- 0
turn[0] <- 0	4	turn[0] <- 1
while(there exists	5	while(there exists
j!=0, flag[j] >= 0	6	j!=1, flag[j] >= 0
and turn[0] = 0)	7	and turn[0] = 1)
do nothing	8	do nothing
<critical section>	9	<critical section>
<exit>	10	<exit>
flag[0] <- - -1	11	flag[1] <- - -1

FIG. 3

```
<entry>

for (int k=0; k <= (to numThreads-2); k++) {

     flag[tid] = k; //"tid" is "i" in Peterson's
algorithm

     turn[k] = tid

     toYield = 0;

     do {

          if (toYield++ >= YieldCount)

               Thread.yield();

          allflag = false;

          for (int j=0; j < numThreads; j++) {

               if (j==tid)

                    continue;

               allflag = allflag || (flag[j] >= k);

          }

          } while (allflag && turn[k]==tid);

     }

//critical section


//exit

flag[tid] = -1
```

FIG. 4

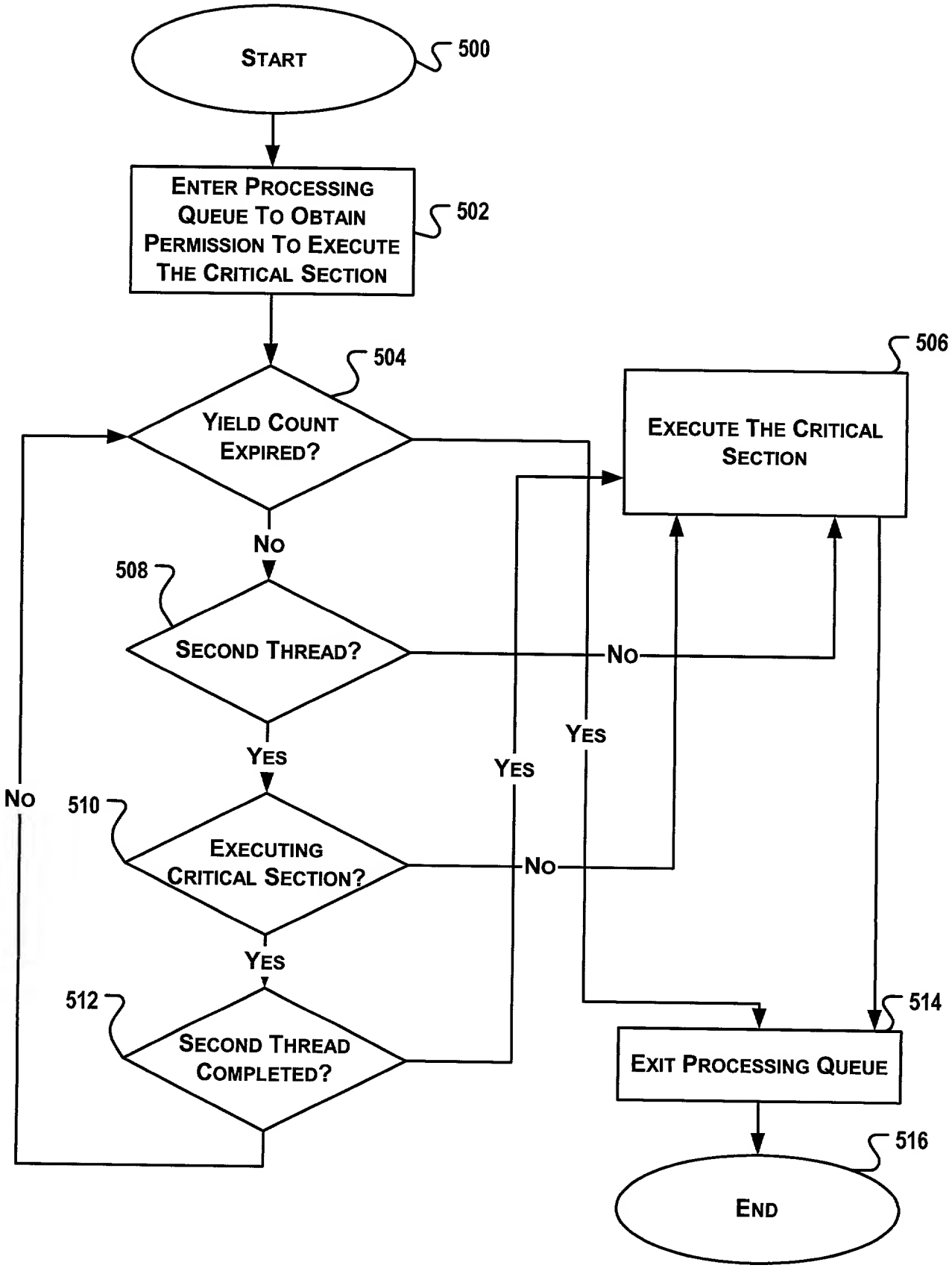
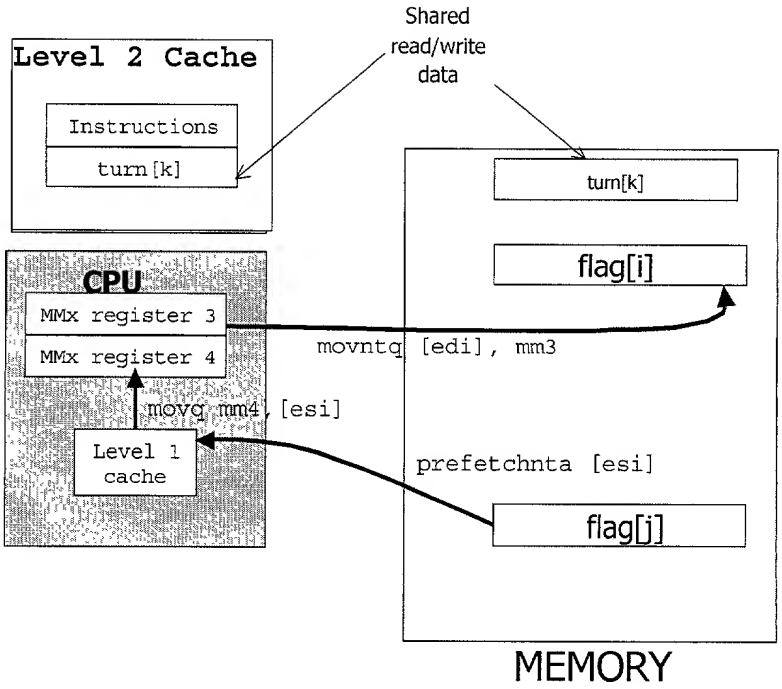

START
500
ENTER PROCESSING QUEUE TO OBTAIN PERMISSION TO EXECUTE THE CRITICAL SECTION
502
YIELD COUNT EXPIRED?
504
EXECUTE THE CRITICAL SECTION
506
NO
SECOND THREAD?
508
NO
YES
YES
YES
NO
EXECUTING CRITICAL SECTION?
510
NO
YES
SECOND THREAD COMPLETED?
512
EXIT PROCESSING QUEUE
514
END
516

FIG. 5



Key:
prefetchnta = Non Temporal
movntq = Streaming Store
movq = Normal Read or

FIG. 6